Abstract of the Disclosure:

A gene expression state estimating system according to the present invention includes an input device 1 for inputting microarray data, a program-controlled data analyzer 2, and an output device 3. The data analyzer 2 has parameter estimating means 21 and 22 for estimating distributed parameters for each component of a mixed normal distribution and a mixing ratio parameter using gene expression level data given from the input device 1, and posterior probability calculating means 23 for calculating the posterior probabilities of gene expression in each channel using each of the estimated parameters. The calculated posterior probabilities are outputted to the output device 3.